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Federal Communications Commission
Office of Engineering and Technology
445 12th Street SW
Washington, DC 20554

I am filing this comment in response to your request for comments on Proceeding 15-170. I hold a Master's Degree in Electrical Engineering and I worked for seven years as an RF Design Engineer. From 1997 through 2004, I designed radio-frequency components for multiple models of digital cellular telephones and the Harris PRISM chipset, one of the earliest commercially successful wireless local area network (WLAN) chipsets. I currently own an information technology consulting business which installs WLANs for small to medium-sized businesses. As both a former designer and a current user of wireless equipment, I suggest several modifications to the proposed rule changes.

Appendix A, Part 2, Number 4: This definition of software-defined radio (SDR) is also overly broad, and may encompass any device in which a user is allowed to modify "*operating parameters of frequency range*" by making a change in software. Under this definition, any cellular telephone or wireless router that allows the user to disable a particular frequency band would be considered a software-defined radio.

Section 2.1033 (4) (i): As currently worded, this paragraph may prohibit end users from installing open-source software or firmware on a wireless router. The practice of installing an alternative operating system such as OpenWRT, DD-WRT, or HyperWRT on wireless routers is widely accepted in the information technology community. Many small businesses use these "prosumer" routers as an inexpensive alternative to enterprise-grade wireless access points and routers. Unfortunately, the firmware and software that is pre-installed on these wireless routers is often insufficient to meet the needs of small business or advanced home users. The open-source alternatives are installed to provide advanced features and to increase security, since security patches are seldom released for pre-installed firmware.

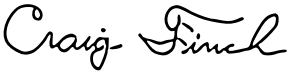
1. The phrase "*use software to control the radio or other parameters*" is overly broad and includes devices which are clearly not software-defined radios. Almost every wireless LAN device allows the consumer to disable operation on a band (such as 2.4GHz), and thus would be affected by this proposed rule change.
2. As currently worded, this proposed rule imposes significant new restrictions on manufacturers of consumer-grade wireless equipment. When considering the broad definitions of SDR used in the proposed rules, manufacturers are likely to forbid all

installation of third-party software, in order to avoid liability and minimize regulatory scrutiny.

Section 2.1042: Part (a) is an overly broad definition of a modular transmitter. For example, a PCI expansion card with a wireless LAN antenna is "...*attached to another product, host, or a device for data and power…*" Combined with the overly broad definition of a software-defined radio, part (e) can be interpreted to mean that manufacturers of consumer-grade, add-on wireless LAN equipment must place new restrictions on the software and firmware updates that they provide. This could impose a substantial burden on both manufacturers and consumers, leading to fewer security patches.

Summary: The intent of the proposed changes is sound: to prevent software modifications that would allow a radio to operate outside its licensed or certified RF parameters. However, the proposed changes, as currently written, would have a chilling effect on useful software modifications that have legitimate business purposes. I encourage you to re-write the rule changes so that they are highly specific and restrict only those software modifications which would have specific negative effects, such as causing a radio to operate outside its licensed band or above the power level for which it is certified.

Sincerely,



Dr. Craig Finch, Ph.D.